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PRINT DATE: 08/09/89

SHUTTLE CRITICAL ITEMS LIST - ORBITER NUMBER: GO-AA-102000-00-000-X

SUBSYSTEM NAME:

REVISION : 1 89/08/09

	PART NAME	PART NUMBER
	VENDOR NAME	VENDOR NUMBER
■ SRU :	WIRE HARNESS	V763-713727
■ SRU :	WIRE HARNESS	V763-713728
■ SRU :	WIRE HARNESS	V763-713732
■ SRU :	WIRE HARENESS	V763-713734
■ SRU :	WIRE HARNESS	V763-713736
■ SRU :	WIRE HARNESS	V763-713739
■ SRU :	WIRE HARNESS	V763-714729
■ SRU :	WIRE HARNESS	V763-714731
■ SRU :	WIRE HARNESS	V763-714733

■ EXTENDED DESCRIPTION OF PART UNDER ANALYSIS:
ORBITER INTERCONNECT CABLES AND CONNECTORS FROM PAYLOAD TANK TRANSDUCERS TO R11A1 PANEL OUTPUT JACK.

■ QUANTITY OF LIKE ITEMS:
SEVERAL, ALL FUNCTIONALLY THE SAME

■ FUNCTION:
SEVERAL INTERCONNECT CABLES AND CONNECTORS USED TO CARRY PRESSURE TRANSDUCER POWER AND SIGNALS BETWEEN THE GALILEO RPM TANKS AND THE OUTPUT JACK ON THE R11A1 PANEL. GROUPED UNDER ONE FMEA NUMBER BECAUSE ALL PROVIDE THE SAME FUNCTIONS, EXHIBIT SAME FAILURE MODES AND EFFECTS.

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PRINT DATE: 08/28/89

SHUTTLE CRITICAL ITEMS LIST - ORBITER

NUMBER: GO-AA-102000-00-000-02

SUBSYSTEM: GALLILEO RPM TANK MONITOR

REVISION# : 89/08/25

ITEM NAME: WIRE HARNESS

CRITICALITY OF THIS
FAILURE MODE: IS

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- FAILURE MODE:
INTERNAL SHORT IN CABLES OR CONNECTORS, FROM TO P.3 SHORT
 - MISSION PHASE:
LS LANDING SAFING
 - VEHICLE/PAYLOAD/KIT EFFECTIVITY: 104 ATLANTIS STS-34
 - CAUSE:
CONTAMINATION, VIBRATION, MECHANICAL SHOCK, THERMAL STRESS, PROCESSING ANOMALY
 - CRITICALITY 1/1 DURING INTACT ABDORT ONLY? N

-
- REDUNDANCY SCREEN A) N/A
 - B) N/A
 - C) N/A

PASS/FAIL RATIONALE:

- A)
- B)
- C)

- FAILURE EFFECTS -

- (A) SUBSYSTEM:
LOSS OF POWER OR SIGNAL PATH. LOSS OF ONE OR MORE SYSTEM FUNCTIONS.
POSSIBLE FAILURE TO DETECT RUNAWAY TANK OVERPRESSURE.
- (B) INTERFACING SUBSYSTEM(S):
POSSIBLE TANK RUPTURE, FIRE/EXPLOSION.
- (C) MISSION:
POSSIBLE LOSS OF GALLILEO/US PAYLOAD
- (D) CREW, VEHICLE, AND ELEMENT(S):
POSSIBLE LOSS OF ORBITER, POSSIBLE LOSS OF LIFE

- (E) FUNCTIONAL CRITICALITY EFFECTS:
SYSTEM MAY FAIL TO DETECT AND DISPLAY RUNAWAY TANK OVERPRESSURES, POSSIBLE FIRE/EXPLOSION IN ORBITER PAYLOAD BAY, POSSIBLE LOSS OF ORBITER, POSSIBLE LOSS OF LIFE.

DISPOSITION RATIONALE

(A) DESIGN

THE WIRE HARNESSES AND CABLES ARE FABRICATED ACCORDING TO APPROPRIATE WIRE LISTS FOR THEIR INTENDED USAGE. THE WIRE HARNESSES AND CABLES ARE COMPOSED OF PFA TEFLON INSULATED WIRE PER SPECIFICATIONS MB0150-041 AND -042, TFE/TEFLON INSULATED WIRE PER SPECIFICATION MB0150-041, KAPTON INSULATED WIRE PER SPECIFICATION MB0143-048, AND COAX CABLE PER SPECIFICATION MB0150-037, TERMINATED IN CONNECTOR PER NASA SPECIFICATION 40M38277 AND 40M39589. ALL WIRE HARNESS ARE FABRICATED IN ACCORDANCE WITH THE REQUIREMENTS OF MIL-STD-883C WITH CIRCUIT SEPARATION AS DEFINED IN MF0004-002.

(B) TEST

QUALIFICATION, CERTIFICATION AND ACCEPTANCE TESTS ARE PERFORMED TO SATISFY THE ENVIRONMENTAL, DESIGN AND PERFORMANCE REQUIREMENTS OF THE DESIGN REQUIREMENTS DOCUMENT (DSR-0077) VERIFICATION MATRIX.

(C) INSPECTION

WIRE HARNESS ARE INSPECTED FOR WEIGHT, WORKMANSHIP, FINISH, DIMENSIONS, CONSTRUCTION, CLEANNESS, IDENTIFICATION MARKING AND CERTIFIED MATERIALS AND PROCESSES. ACCEPTANCE TEST PROCEDURE ARE APPROVED BY QUALITY ASSURANCE.

(D) FAILURE HISTORY

FAILURE HISTORY INDICATES NO GENERIC FAILURE MODES EXIST (APOLLO, MILITARY)

(E) OPERATIONAL USE

NONE

RELIABILITY ENGINEERING:	W. R. MARLOWE	:	<i>W. R. Marlowe</i>
DESIGN ENGINEERING	: L. COLEMAN	:	<i>L. Coleman</i>
QUALITY ENGINEERING	: C. ROLLINS	:	<i>C. Rollins</i>
NASA RELIABILITY	:	:	<i>[Signature]</i>
NASA SUBSYSTEM MANAGER	:	:	<i>[Signature]</i>
NASA QUALITY ASSURANCE	:	:	<i>[Signature]</i>